

Two Temperaments Seen through Strindberg's Miss Julie

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Abstract This study is examining the mood in which young people express their sensitivity to a literary idea in writing. The context is the 19th Century Naturalism. An earlier reported study could show that persons, when confronted with evolutionary determined literary texts, are either consistent in their way of approaching those tasks during three years, or are open to change. The latter strategy has been interpreted as sensitivity to instruction. In the present study, the concept of sensitivity was redefined to mean temperament. Instead of describing temperament the classical way, two persons' written discourse has been treated with Perspective Text Analysis (PTA/Vertex) and represented through a graph program. The study could show that the two persons' different conceptual structure got its flow dynamical counterpart in the evolving 3D-shapes. Therefore the shapes could be given a terminological description as geometric expression of temperament.

When the French 19th Century writer Gustave Flaubert declared his view on the aim of literature, namely to be an objective depiction of reality, the association to the modern technical achievement of that time, namely the art of photography, is easily made. The detailed observation of real life was elaborated further by the naturalists, of which the most prominent literary figure is Émile Zola. The theory the most fostered by the naturalists was the one proposed by Charles Darwin about the origin of species and natural selection. Darwin himself did not consider his theory to be applicable to people and society, but nevertheless the so called Social Darwinism became a productive approach in both literature and social analysis. In this atmosphere, ideas were formulated about literature as a product of heredity, environment, time (moment), and circumstances, which became the naturalist writers' components to describe and explain human behaviour according to scientific methods. The Darwinist view of life presupposed equality between man and animal in the sense that human beings were considered to be governed by instincts. One example is the story about how urge and passion in a deterministic way break people down and push them towards unfaithfulness, hatred and murder, and finally the complete moral decadence in Zola's novel *Thérèse Raquin* (1867). In the preface he argues in favour of the scientific view on literary writing, but felt that he had to justify his position in the second edition, since his reviewers accused him of writing putrid literature. Therefore, he explains (Zola, 1867/1961):

Dans *Thérèse Raquin*, j'ai voulu étudier des tempéraments et non des caractères. Là est le livre entier. J'ai choisi des personnages souverainement dominés par leurs nerfs et leur sang, dépourvus de libre arbitre, entraînés à chaque acte de leur vie par les fatalités de leur chair. /.../ On commence, j'espère, à comprendre que mon but a été un but scientifique avant tout. Lorsque mes deux personnages, Thérèse et Laurent, ont été créés, je me suis plu à me poser et à résoudre certains problèmes : ainsi, j'ai tenté d'expliquer l'union étrange qui peut se produire entre deux tempéraments différentes, j'ai montré les troubles profonds d'une nature sanguine au contact d'une nature nerveuse. Qu'on lise le roman avec soin, on verra que chaque chapitre est l'étude d'un cas curieux de physiologie. (p. 8)

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In short he declares that he had wanted to study temperaments and not characters. For this reason he has chosen persons without any free will, who are totally dominated by the fateful sensuality (Fr. chair = flesh). He has tried to explain the strange union ("union étrange") that is arising between two different temperaments by pointing at the problems when one of them is sanguine and the other is nervous.

Temperaments Doctrine was in vogue during the 19th Century in a form that contained aspects from a medieval doctrine about body fluids. By classifying the various temperaments, society got means for explaining medically healthy and sick phenomena. At the same time Temperaments Theory provided a terminology for making psychological analysis. The psychology of humans was a new and inexperienced branch of science and came to play an important role in the naturalistic literature.

In Flaubert's literary declaration it was not presupposed that the reality depicted is seen through the "photographer's" attitude and angle. However, when Zola in his statement expressed that a work of art is a corner of creation/nature seen through a temperament ("une oeuvre d'art est un coin de la création vu à travers un tempérament") he introduced a subjective component. For sure he highlighted that he wanted to regard himself as experimenter, who by scientific methodology observes how a person's temperament influences her behavior, but at the same time it is exactly this very temperament that governs his formation of the literary text. Because, there is no doubt that Zola takes his stand about phenomena in contemporary French society; to depict the life of the vulnerable presupposed moral and commitment. Social commitment is a characteristic feature among the naturalists, which had a large impact in Nordic literature. For example, who can neglect the choleric temperament, which gives colour to August Strindberg's literary projects?

In principle every text carries the author's intentions, which the reader has to be sensitive to. If not, some "union étrange" will come about, which may lead to misunderstandings in communication. Zola had made an account of his scientific mode of working in *Thérèse Raquin* against the cultural and scientific debate of that time and therefore he was not prepared that his critics did not realize what he was up to, which he had been naive enough to believe. However, he notes that instead of lamenting he is pleased that his colleagues have as sensitive nerves as a young girl ("ont des nerfs sensibles de jeune fille"). With his way of conceptualising, one could say that the reading of his novel took place in another temperament than his own. When a literary text, which aims at embedding a certain structure, is not conceived in the same way by the readers, the reason to this dissimilarity may be the readers' various degree of sensitivity to the structure in question. The sensitivity could very well depend on the state of mind called temperament.

Temperament Embedded in Text

Reference works (e.g., *The Penguin Dictionary of Psychology*) defines temperament as "dispositions toward particular patterns of emotional reactions, mood shifts and levels of sensitivity resulting from stimulation". The most known experiments are probably the ones carried out by Pavlov. He assumed that temperament is the basic characteristics of dogs when they respond with reflex behaviour to various stimulations. During some decades this kind of animal research has not been very salient but seems to be on the rise again, for example in the study of horses, where temperament tests are used for accommodating horses to riders. Moreover, the concept of temperament can be seen as the point of departure in therapeutic situations within psychology and psychiatry, since temperament is understood as inherited to a high degree and thus is valid over cultures.

Temperament as operational concept is not very different from the ecological psychology concept of *self-sensitivity*, which was formulated by James J. Gibson (1982). In the perception of an environment (milieu or text) the individual stimulates its own ability to perceive (read) and reproduce (write) in the first place through eye movements (see also Hestenes, 1994). The individual-specific movement patterns are forming the basis for establishing structure, i.e. invariance. In ecological theory it is the cooperation between individual and environment that gives rise to structure, whereas inherited are the "dispositions". Quite naturally, the resulting emotional reactions vary between individuals depending on individual limitations in environmental interactions. Kugler and Turvey (1987) take the same principled standpoint in establishing their concept *self-assembly*. By this is meant a complex system of flows and forces that make up a rhythm, which characterises for example the pace of an organism. This kind of movement is an inherited quality, which defines the organism in a unique way. Like an animal or a human would be identified by walking style, the non-verbal movement of writing is an individual-specific expression.

In the moment when a writing operation starts, a space is formed, whose contours make visible how the flow of the writer moves dynamically. The fashion of forming the space is strongly related to the sensitivity the writer expresses to the subject area. A longitudinal study has shown the degree to which the development of a person's textual space takes place in her/his written reproduction of literary sensitivity and the degree to which this sensitivity changes over time, as represented via a graph program. One person's task solution ("writing style") seems to be governed by the same conditions during a long period of time (the time studied: three years) while another person responds in various ways during the same period (B. Bierschenk, 2005; I. Bierschenk, 2005). Thus a conclusion to be drawn is that individual characteristics are limiting the sensitivity to instruction and the ability to grow with the task. In the present study, these characteristics are termed temperament. A temperament is assumed to be structurally embedded and can be made visible through the text production movements.

The purpose here is to give a geometric representation of two temperaments, which have been governing in the reading of a naturalistic text, to compare their written expression, and to describe them in flow dynamic terms.

Participants

Two 18 year olds have been participating in the study. The persons were selected on the basis of their totally different ways of approaching tasks in other contexts. In the present context it will be examined the extent to which their apprehension at a certain point in time differs and the way their temperament may be described through the produced spaces as an effect of literary sensitivity.

Materials

August Strindberg's naturalistic play *Miss Julie* was used at this test occasion. It counts as the most consequent of Strindberg's naturalistic works, where he, like Zola, in a preface presents and comments upon the ideas, the persons, and the dramatic form. Among other things Strindberg discusses the concept of character. He means that character has been the dominating basic trait of the "complex of soul" and that possibly it had been confused with temperament. After a while character became the middle class expression for something automated, adjusted, frozen with the sense of undeveloped personality, who had stayed in its "nature", that is, had not grown further than what heredity admits. In connection with theater, a character became a type, easily recognized and therefore simplified before the audience. Strindberg does not believe in this kind of theater character and decides to remodel the characters to become what he call "characterless", a term that he explains like this (Strindberg, 1888 /1957):

Som moderna karaktärer, levande i en övergångstid, mer brådslande hysterisk än åtminstone den föregående, har jag skildrat mina figurer mer vacklande, söndergångna, blandade av gammalt och nytt, /.../

Mina själar (karaktärer) äro konglomerater av förgångna kulturgrader och pågående, bitar ur böcker och tidningar, stycken av människor, avrivna lappar av helgdagskläder, som blivit lumpor, alldeles som själen är hopflikad. (p. 11) [Original Swedish]

His explanation is in short: The drama figures as modern characters are living in a time of transition, thus they are unstable and mixed up by old and new ideas. Like people and belongings have turned into pieces and rags his souls are conglomerates of past and ongoing cultural levels.

Strindberg gives reasons to his way of translating the naturalistic ideas: he works neither solely physiologically, nor solely psychologically (p. 10). Not only heredity but also other components are influencing the events. He means that he should be given credit for using this diversity of motifs. He does not refer explicitly to Zola, but tries to avoid the word character his way. The standpoint he takes has the effect that the persons seem more natural than they had been if he had modeled them according to the scientific ideas of the time. They fit into the Social Darwinism. In his description of the modern character there is no doubt a portion of temperament, which is included in the modern era and becomes part of the cultural conglomeration. Thereby the ability to change with the circumstances would also be a valid constituent of temperament.

Two persons are facing each other, the upper class lady Miss Julie and her servant Jean, both being symbols of the possibilities of the growing society to cross borders in defiance of genetic and social limits. The secularised age with its scientific view on humans may lead to the rise of a new order; both can push the social, sexual, and gender taboos. The ground theme of the drama is the opportunity to make the leap away from limiting heredity towards social survival. However, the species is captured in its habitat. To apprehend symbols of this theme at various levels of the drama means to show sensitivity to the idea of naturalism, which should be evident both structurally (at the conceptual level) and flow dynamically (at the level of writing movements).

Procedure

The participants were reading the play as part of a curriculum, where a naturalistic work was required together with various kinds of preparations. This part was carried out during the fifth term of the gymnasium studies and the participants were not aware of the selected test occasions. The edition used was a photocopy, in which the preface had been removed. The participants had to answer questions about people, milieu, use of symbols, and finally the following question, which is the test item here (translated from Swedish):

Test item: "Miss Julie" is a good example of the way the ideas of the time have been translated into literature. What do you think Strindberg tried to say with his drama play? Discuss and give examples.

The two participants have produced the following texts:

Person I [Original Swedish]: Det klassamhälle som visas tror jag Strindberg tyckte var fel. Samhället var på väg att förändras och medför att de första förändrarna, Julie och Jean, inte kunde bli lyckliga. Jag tror att Strindberg ville visa just hur fel den synen på människor var.

Person I [Literal English]: The class society that is shown I believe Strindberg thought was wrong. The society was on its way to change and results in that the first pioneers, Julie and Jean, could not be happy. I believe that Strindberg wanted to show just how wrong this opinion about humans was.

Person II [Original Swedish]: Kanske något om hur alla har en plats i samhället och att även om man drömmer sig bort i storslagna planer så behåller man den platsen. T.ex. hur Julie gått på hans ord om Como men det slutar ändå med att han är tvungen att stanna vilket även innefattar hennes död. # Kanske också försöker Strindberg påvisa hur det straffar sig att befatta sig med synder, som att förföra en enkel man etc., även om domen fällt över kvinnan. # Man ser ju också hur dåtidens kvinnosyn var, och att det är mannen som står över. # Eller så kanske är hans tanke inte alls som jag först tänker mig utan att det spelar ingen roll ur vilken klass du är född, det gör inte din personlighet. Jean är ju eller anser sig minst lika, om inte mer, sofistikerad än Julie. [# = stycke]

Person II [Literal English]: Perhaps something about how everyone has a certain place in society and that even though one is dreaming oneself away by grandiose plans, one keeps that place. E.g. how Julie had trusted in his word about Como but yet it ends with that he is forced to stay which also includes her death. # Maybe also Strindberg tries to demonstrate how it does not pay to deal with sins, like to seduce a simple man etc, even though the judgment is passed over the woman. You also see how the past time opinion was about women and that it is the man who is superior. # Or maybe, his idea is not at all what I first think but that it does not matter in which class you are born, that does not make your personality. Sure Jean is or thinks he is at least as much, if not more sophisticated than Julie. [# = paragraph]

A Biologically Anchored Method for Text Analysis

Structure may be compared with the biological phenomenon photosynthesis, a course that no one has ever been able to watch. Only the results of the synthesis process have been observed. In a similar way, a creative process of synthesis is going on in text production, whose single components not until now by means of the method Perspective Text Analysis (PTA) could be observed. The instrument for these observations is the result of research, which has been going on since the 1980's and has found evidence that language is biologically anchored. Several validation experiments have been carried out (an account is given in I. Bierschenk, 2011b). A couple of examples are given here.

Based on a known scientific citation, one study concerned its translation from the original English text into Swedish, and also a further translation made by another person as a second step from the Swedish text into Italian (B. Bierschenk, 2002a). In spite of the fact that the Italian text seemed to be in anti-phase, the internal structure was found to be coherent with the other languages. Moreover, it could be shown that the biological anchorage of the movement patterns of text building is producing invariance in one and the same translator's conceptual structure in transiting from the Swedish original version to English and thereafter to German, despite that a personal perspective can be traced through variable movement patterns (B. Bierschenk, 2002b, c). These results make up the evidence that it is on the textual surface level that a translator may have its impact. The dynamics of a text may vary depending on the personal perspective a translator weaves in at his processing and depending on the limitations inherent in the single language when it comes to expressing dynamics. But irrespective of dynamic variation, there exists an internal structural similarity between the linguistically different texts, which can only be interpreted as biological similarity, coming into expression in text production. Text is the expression of biology.

The method Perspective Text Analysis (PTA, version Vertex) builds on the discovery of a mechanism that is controlling the flow of language and is making it rotate in spiral form in producing text (B. Bierschenk, 2011; B. Bierschenk & I. Bierschenk, 2011; I. Bierschenk & B. Bierschenk, 2004, 2011; I. Bierschenk, 2011a). The kernel of this mechanism is the verb, which is surrounded by textual strings. These strings belong either to the Agent (A) component, which stands for Intention and is positioned before the verb, or belongs to the (O) component, which stands for Orientation and is positioned after the verb. Both occur explicitly or implicitly within every clause and it is their intricate cooperation that is forming

a dynamic flow. In order for a flow dynamics to come about, every clause or sentence must contain at least one rotating A-string and one rotating O-string (the term is Functional Clause, see I. Bierschenk, 1999). The rotation of the flow takes place when strings are being omitted in an asymmetric fashion around the verb string, which is the text producer's way of balancing between what is explicit and implicit information. In the course the mechanism is keeping track of where these "holes" are emerging and will mend them according to a specific algorithm. The holes are shadowed (virtual) strings and mending means copying them through the root of their explicit value.

The unity that is making up the graph is interval, which is demarcated with punctuation mark. Thus an interval may contain more than one functional clause. Through observation of the number of intervals in relation to, e.g. objective per interval and the rotation values of the strings, the text can be geometrically represented. This representation is visualised in a 3D shape, which expresses the textual form (B. Bierschenk, 2001). The geometric measurement of the displacement of strings is made by calculating radians. The way a particular radian is operating is effecting the development of a space. For the graphical representation SigmaPlot (2008, Version 11) is used.

Results

Let us begin by examining the two persons' texts at a surface level. It is not difficult to see two very different ways of relating to the task. *Person I* is answering the question but without discussing. The answer is further delivered in the form of reported speech, which means that the text writer is not going beyond the framework of the question. *Person II* on the contrary is trying to take into account the second part of the question in discussing the matter and giving examples. This response is therefore more differentiated. After having reflected on the main characters' relationship to each other, the writer is arguing the other way around.

An investigation of the two persons' conceptual structure in the Intention and Orientation dimensions has shown that they diverge in structural sensitivity over the three years (B. Bierschenk, 2005; I. Bierschenk, 2005). The structure of *Person I* could be summarized through variants of the basic idea "Captivity", *Person II* through variants of the concept "Freedom". Table 1 presents the conceptual structure taken from the part of the longitudinal study concerning *Miss Julie* (B. Bierschenk, & I. Bierschenk, 2004, pp. 19-22). The structure emerges when the folded (convoluted) text is represented in the form of a so called energy landscape. The folds point at those places in the text where the energy has been concentrated the most through the mental movements, oscillating between surface and depth.

Table 1

Naturalism: summary of conceptual structure

	<i>Value</i>	<i>Intention</i>	<i>Value</i>	<i>Orientation</i>
Person I	45.55	Conformity	23.14	Adjustment
			-16.72	Confinement
Person II	131.53	Heredity Dominance	121.08	Speciation
			- 70.30	Adaptation

Most characteristic of the sensitivity in *Person I* is the concept "Adjustment" (global state attractor). Deeply embedded we find "Confinement", which indicates that the text producer has a feeling that some social border crossing is not possible, and consequently that a correction mechanism takes place, leading to normalization. The global state attractor of the Intention is "Conformity", implying that nobody can exceed beyond the frame. This structure

is clearly pointing towards the ideas of Social Darwinism. *Person II* is focusing "Speciation", which implies the theory of natural selection and the survival of the fittest, indicating that the text producer has been sensitive to the idea of the new human species of that time. There is a clear divergence between "Adjustment" in the frame of Person I and its variety "Adaptation" in the frame of Person II. In the structure of Person II it is a matter of biological adjustment, which is more deterministic than what is conceptualized and achievable in a social connection. It follows that the Intention of Person II is concentrated around "Heredity Dominance". Both persons are sensitive to Naturalism, although at different levels.

If it is feasible to talk about temperament in a structural sense, it will be expressed through the values that are indicating the string rotations. *Person II* is representing a lot more rotations, as the difference between the lowest and highest value is greater compared to what *Person I* is representing. The oscillations have in fact their correspondence in the concepts such that the "shallow" text gives expression to a more shallow or narrow conceptual structure, seen to the theoretical background. What will be studied in the following is the unfolded (developed) textual surface, showing the potential energy of the text in the shape of the flow dynamics that the text producer has accomplished. The assumption behind is that the dynamics can be described as an expression of temperament without knowledge of the structure. Figure 1 (below) represents the temperament governing Person I and Person II in the Intention and the Orientation respectively.

Comments to the graphs. On the x-axis the agent variables are entered, on the y-axis the number of time intervals is represented, and on the z-axis the values of the components are steering the development forwards. The loading of data has been done from left to right, just like in ordinary natural reading, while the reading of the textual development in the graph is done from left to right. The number of intervals has been converted to a scale by the program.

Flow dynamics of Person I. The textual flow of Person I displays a dynamics without any remarkable energy. The lowest value in the Intention is to be found in the first interval (-1.34) and the highest value in the second interval (7.54). In the Orientation, four values under the 0-line have appeared, of which the lowest (-14.99) is marking the deep waving formation in the middle of the text. The sentences are almost identically built up with virtual strings being copied into their "holes" in a regular fashion. Any great changes are not to be seen as the text advances and the only thing that varies is the natural variation at the word and grapheme levels. The result of this flow is the impression of indifference and suppression. When it moves a little extra, in the second interval, a clear move is deciding the shape. This calm and even movement can be seen in the complementary symmetrical relationship between Intention and Orientation; where one is bowl-shaped (O) the other is cover-shaped (I). Finally, the perspective of the text producer is directed straight towards the objective.

Flow dynamics of Person II. The textual flow of Person II is representing a quite different and more energetic dynamics. In the first place it can be observed that the temperament that governs the Intention is shifting when it governs the Orientation. A certain complementarity is discernible even in this flow but it is asymmetric. This text has a greater number of intervals. In the second and sixth interval of the Orientation there are several deep values, (-30.19, -21.18, -13.82) and (-13.54) respectively, of which the latter is hidden in the graph. This textual flow is characterised by less word and grapheme variation than the former and, consequently, the highest value (6.19), showing up in the Orientation, is lower than the highest value of Person I. However, the text is not flowing evenly and regularly, so the result of this flow becomes varied and lively. The Orientation is stretching, sinking, heaving and finally it is flattening out.

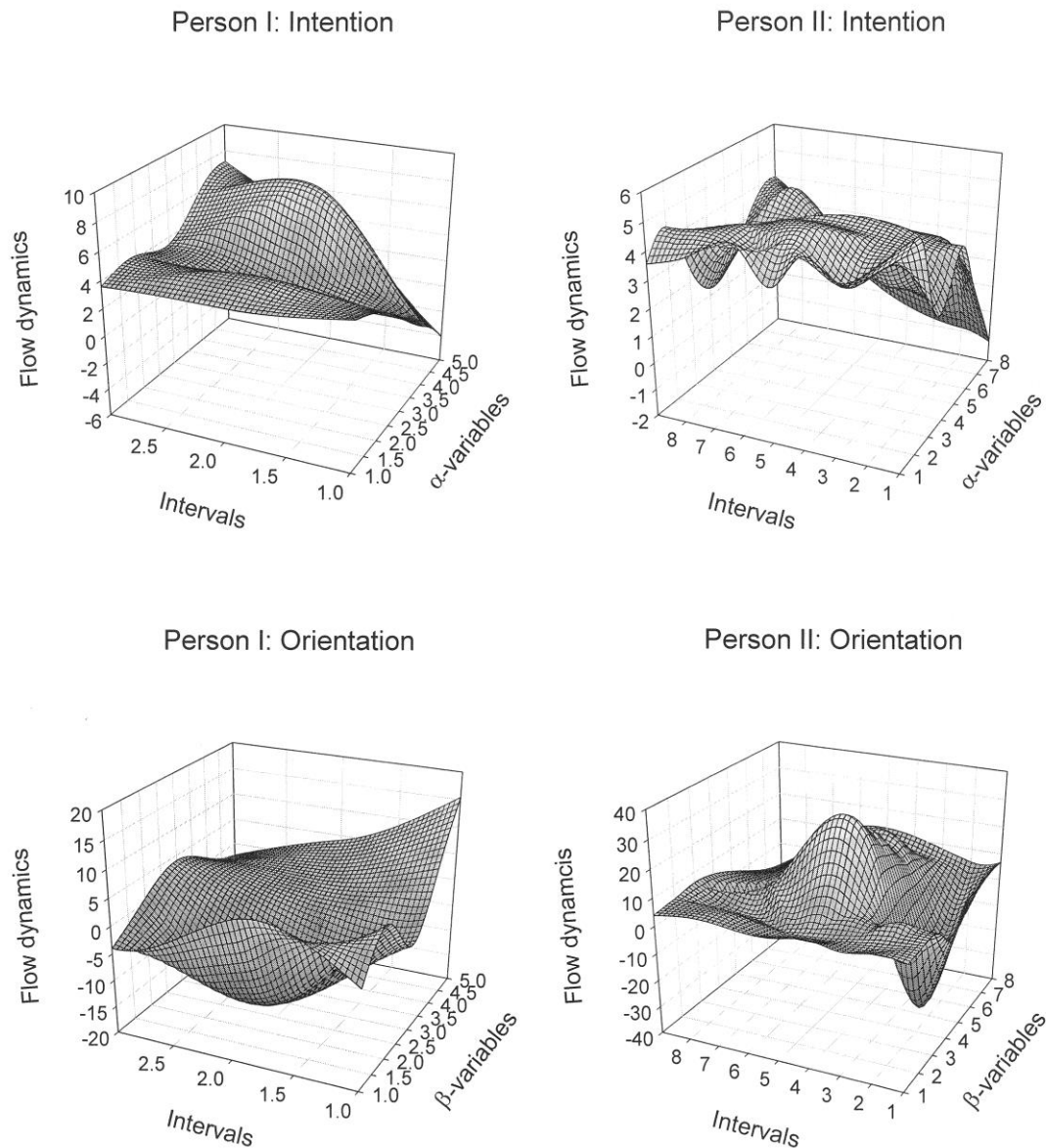


Figure 1 *Flow dynamics for Person I and II: Intention and Orientation*

The Intention graph shows a flow that is forming surface waves, which are oscillating without forming any deep whirls. The variable surface depends on the way the writer's perspective is breaking the objective, which results in the copying of a number of agent strings.

Conclusion

Since Intention (I) and Orientation (O) are cooperating in the forming of structure, it seems plausible that Temperament gets a designation that refers to both components. As appropriate for describing the temperament of *Person I*, terms like restrained, bound, uniform, and straight may be suggested. The summary term for the Intention could be *Viscous* in the sense of flow resistance. At the same time the Orientation flow is extending like ripples after

some breaking of the surface has taken place, which indicates a temperament with “low surface tension”, i.e., more *Extensive* than concentrated in relation to the topic.

Appropriate terms for the temperament of *Person II* could be spontaneous, changeable, irregular, and stretchable. Therefore the summary term to choose for the Intention may be *Prismatic*, in the sense that the surface is not uniform but has many and variable breakpoints. As to the orientation, the movements are signaling an *Intensive* temperament, since the graph takes off by a deep “breath” and then sets up the objective in a focused and constructive manner.

Discussion

This study could demonstrate that the dynamics, here called temperament, evolves in cooperation between the biological and the physiological dimension of writing movements. However, it looks different for the two persons. It is evident that the theories about self-sensitivity (Gibson, 1982) and self-assembly (Kugler and Turvey, 1987), which can explain this type of movement, are more or less discernible in the two texts. The graph representation of the movements of *Person I* give expression to a mental process that has been terminated before the person is writing down its answer to the question. This text shows more of self-assembly, as it conveys the result at a moment where the rhythmic oscillations have mostly died down. The graphs of *Person II* do not depict anything like that. They will best be explained through the theory about self-sensitivity, since it makes visible an assumed self-stimulation process. In this textual flow the mental process can be followed, which means that the movements are emerging and maybe not even terminated at the moment when the person is putting an end to the text.

As to the description of temperament, this study has given some additional results, which may be of importance for continuing experimentation. It can be stated that it has been possible to find functioning designations for various temperaments in accordance with the flow dynamic and geometric theory behind Perspective Text Analysis. Further, the results give an indication that the structural concepts of Table 1 could have their counterpart in the flow dynamics. Would it therefore be possible to describe and denote temperament only with the flow dynamics without the need to interpret the meaning of a text? The text of *Person I* is embedding concepts with the sense of limitation, which corresponds to the tight and restrained dynamics of the flow. The text of *Person II* contains concepts with a clearer link to the topic and this indicates a deeper processing and discussion of the task. But the link between structure and graphical shape is not linear. Though, as it has been documented here, the more careful work can be observed in the flow dynamics, which is underlined by the higher oscillation rate. In this way textual temperament can be given representative terms. Thus the conclusion must be that knowledge of the structure is not necessary for studying temperament in a text, which should have considerable theoretical and practical consequences.

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